

California Arbovirus Surveillance Bulletin #27

Week 40 Friday, October 4, 2019



Weekly Update

Humans

West Nile virus

A total of 17 human cases of West Nile virus (WNV) illness were reported this week from 11 counties: Butte (1), Fresno (1), Kern (3), Los Angeles (1), Merced (1), Riverside (3), Sacramento (1), San Bernardino (1), Stanislaus (1), Tulare (3), and Ventura (1). **These are the first WNV cases reported from Sacramento and Ventura counties this year.** In 2019, 128 WNV human cases have been reported from 19 counties. Of the 128 reported cases, 73 (57%) had neuroinvasive disease and 3 (2.3%) fatalities have been reported. The median age of the individuals is 56 years (range: 11–93 years) and 79 (62%) are male. Dates of symptom onset range from May 12 to September 22. In addition to the 128 cases, 17 asymptomatic infections have also been reported from Butte (1), El Dorado (1), Kern (3), Madera (1), Merced (1), Orange (2), San Bernardino (4), San Joaquin (1), Stanislaus (1), Sutter (1), and Tulare (1) counties. At this time last year, 118 human cases had been reported from 26 counties.

St. Louis encephalitis virus

No new cases were reported this week. In 2019, 5 SLEV human cases have been reported from 3 counties: Fresno (2), Kern (1), and Imperial (2). Of the 5 reported cases, 5 (100%) had neuroinvasive disease. The median age of the individuals is 54 years and dates of symptom onset range from July 14 to August 10. No fatalities have been reported.

Dead Birds

A total of 11 WNV positive dead birds were reported this week from 5 counties: Los Angeles (7), Sacramento (1), San Bernardino (1), Santa Clara (1), and Ventura (1). **This is the first WNV positive dead bird from Ventura County this year.** In 2019, a total of 186 WNV positive dead birds have been reported from 19 counties. At this time last year, 478 WNV positive dead birds had been reported from 20 counties.

Mosquito Pools

West Nile virus

A total of 80 WNV positive mosquito pools were reported this week from 13 counties: Fresno (4), Kern (2), Kings (2), Los Angeles (13), Madera (4), Orange (29), Riverside (1), Sacramento (2), San Bernardino (1), San Joaquin (5), Stanislaus (3), Tulare (11), and Yolo (3). In 2019, a total of 3,206 WNV positive mosquito pools have been reported from 24 counties. At this time last year, 1,939 WNV positive mosquito pools had been reported from 29 counties.

St. Louis encephalitis virus

A total of 17 SLEV positive mosquito pools were reported this week from 8 counties: Fresno (2), Kern (2), Kings (1), Los Angeles (1), Madera (1), Riverside (1), Stanislaus (1), and Tulare (8). In 2019, a total of 337 SLEV positive mosquito pools have been reported from 12 counties: Fresno (55), Imperial (5), Kern (56), Kings (4), Los Angeles (2), Madera (4), Merced (2), Orange (1), Riverside (102), San Bernardino (1), Stanislaus (11), and Tulare (94). At this time last year, 375 SLEV positive mosquito pools had been reported from 8 counties.

California Arbovirus Surveillance Bulletin #27

Week 40 Friday, October 4, 2019

Sentinel Chickens

West Nile virus

A total of 5 WNV seroconversions were reported this week from 2 counties: Colusa (2) and Sutter (3). In 2019, 119 WNV positive chickens have been reported from 16 counties. At this time last year, 141 WNV positive chickens had been reported from 16 counties.

St. Louis encephalitis virus

No new seroconversions were reported this week. In 2019, 3 SLEV positive chickens have been reported from 1 county (Merced). At this time last year, 1 SLEV positive chicken had been reported from 1 county.

2018 & 2019 YTD West Nile Virus Comparisons		
	2018	2019
Total # Dead Bird Reports	7,020	4,787
# Positive Counties	38	33
# Human Cases	118	128
# Positive Dead Birds / # Tested	478 / 1,875	186 / 1,520
# Positive Mosquito Pools / # Tested	1,939 / 38,786	3,206 / 39,493
# Seroconversions / # Tested	141 / 8,520	119 / 7,652

California Arbovirus Surveillance Bulletin #27

Week 40 Friday, October 4, 2019

YTD WNV Activity by Element and County, 2019					
County	Humans	Horses	Dead Birds	Mosquito Pools	Sentinel Chickens
Amador	1				
Butte	5			44	33
Colusa					6
Contral Costa			1		1
Fresno	45	2	10	493	
Glenn				1	1
Imperial	3			2	
Kern	15	2	2	128	
Kings				63	
Lake				6	
Los Angeles	8		36	77	16
Madera	1	2		85	
Merced	3	1	3	48	16
Orange	1		38	167	
Placer			3	52	8
Riverside	8	1	2	517	
Sacramento	1	1	43	74	1
San Benito					1
San Bernardino	5	1	4	47	
San Diego	2		1		
San Joaquin	4	1	5	284	
San Luis Obispo	1				
Santa Clara			5		
Shasta				3	
Solano	1			5	4
Stanislaus	10	2	4	200	
Sutter				15	11
Tehama					4
Tulare	13		17	813	10
Tuolumne			1		
Ventura	1	1	1	1	1
Yolo			7	59	1
Yuba			3	22	5
Totals	128	14	186	3,206	119

California Arbovirus Surveillance Bulletin #27

Week 40 Friday, October 4, 2019

TESTING SUMMARIES

Humans

		WNV	SLEV	WEEV
Human Cases	Week	17	0	0
	YTD	128	5	0

Dead Birds

		Number Tested	WNV Positive
Dead Birds	Week	39	11
	YTD	1,520	186

Chickens

		Number Tested	WNV Positive	SLEV Positive	WEEV Positive
Chicken Sera	Week	283	5	0	0
	YTD	7,652	119	3	0

Mosquitoes

		Positive / Total Tested					
Mosquito Pools	Week	WNV	SLEV	WEEV	CHIK	DENV	ZIKA
		80 / 1,218	17 / 1,092	0 / 974	0 / 0	0 / 0	0 / 0
		YTD	3,206 / 39,493	337 / 35,758	0 / 33,161	0 / 743	0 / 743

POSITIVES

Dead Birds

County	Agency	City	Zip Code	Species	Date Reported	Virus
Los Angeles	Greater Los Angeles Co VCD - Sylmar	Los Angeles	91335	American Crow	9/18/2019	WNV
Los Angeles	Los Angeles Co Veterinarian	Los Angeles	90035	Common Raven	10/1/2019	WNV
Los Angeles	Los Angeles Co Veterinarian	Los Angeles	90036	American Crow	9/30/2019	WNV
Los Angeles	Los Angeles Co Veterinarian	Los Angeles	900025	American Crow	9/25/2019	WNV
Los Angeles	Los Angeles Co Veterinarian	Tarzana	91356	American Crow	9/23/2019	WNV
Los Angeles	Los Angeles Co Veterinarian	Woodland Hills	91367	American Crow	9/30/2019	WNV
Los Angeles	Los Angeles Co West VCD	Calabasas	91302	American Crow	9/17/2019	WNV
Sacramento	Sacramento-Yolo MVCD	Citrus Heights	95610	American Crow	9/26/2019	WNV
San Bernardino	West Valley MVCD	Chino	91710	Common Raven	9/20/2019	WNV
Santa Clara	Santa Clara Co VCD	Saratoga	95070	Steller's Jay	9/29/2019	WNV
Ventura	City Of Moorpark VCD	Moorpark	93021	American Crow	9/22/2019	WNV

California Arbovirus Surveillance Bulletin #27
 Week 40 Friday, October 4, 2019

Mosquito Pools

County	Site Code	Pool #	Species	City	# in Pool	Trap Type	Collected	Virus
Fresno	CNSL2491	872	Cx. tarsalis	Centerville	21	BGSENT	9/24/19	WNV
Fresno	CNSL3301	870	Cx. quinquefasciatus	Parlier	12	GRVD	9/24/19	WNV
Fresno	CNSL8050	877	Cx. quinquefasciatus	Fresno	44	GRVD	9/25/19	SLEV
Fresno	CNSL8143	904	Cx. quinquefasciatus	Clovis	26	GRVD	9/27/19	SLEV
Fresno	FRWS100006	337	Cx. tarsalis		50	CO2	10/1/19	WNV
Fresno	FRWS200003	344	Cx. tarsalis		50	CO2	10/1/19	WNV
Kern	DLNO11	246	Cx. quinquefasciatus	McFarland	22	GRVD	9/27/19	SLEV
Kern	DLNO35	244	Cx. quinquefasciatus	Delano	50	BGSENT	9/26/19	SLEV
Kern	DLNO35	244	Cx. quinquefasciatus	Delano	50	BGSENT	9/26/19	WNV
Kern	DLNO48	247	Cx. quinquefasciatus	Delano	16	GRVD	9/27/19	WNV
Kings	KNGS3018	501	Cx. tarsalis	Lemoore	50	BGSENT	9/26/19	SLEV
Kings	KNGS3018	501	Cx. tarsalis	Lemoore	50	BGSENT	9/26/19	WNV
Kings	KNGS5511	487	Cx. pipiens	Hanford	16	BGSENT	9/24/19	WNV
Los Angeles	GRLA2021	5957	Cx. quinquefasciatus	Los Angeles	34	GRVD	9/26/19	WNV
Los Angeles	GRLA2023	5959	Cx. quinquefasciatus	Los Angeles	29	GRVD	9/26/19	WNV
Los Angeles	GRLA2097	1033	Cx. quinquefasciatus	La Mirada	16	GRVD	9/26/19	SLEV
Los Angeles	GRLA2097	1033	Cx. quinquefasciatus	La Mirada	16	GRVD	9/26/19	WNV
Los Angeles	GRLA2503	5930	Cx. quinquefasciatus	Los Angeles	50	GRVD	9/24/19	WNV
Los Angeles	GRLA2555	5955	Cx. quinquefasciatus	Los Angeles	32	GRVD	9/26/19	WNV
Los Angeles	GRLA2574	5940	Cx. quinquefasciatus	Los Angeles	50	GRVD	9/25/19	WNV
Los Angeles	GRLA2651	5942	Cx. quinquefasciatus	Los Angeles	37	GRVD	9/25/19	WNV
Los Angeles	GRLA2889	1026	Cx. quinquefasciatus	Lakewood	40	GRVD	9/25/19	WNV
Los Angeles	GRLA2953	1035	Cx. quinquefasciatus	Santa Fe Springs	50	GRVD	9/26/19	WNV
Los Angeles	GRLA3034	5950	Cx. quinquefasciatus	Los Angeles	50	GRVD	9/25/19	WNV
Los Angeles	GRLA3047	1005	Cx. quinquefasciatus	Downey	50	GRVD	9/24/19	WNV
Los Angeles	LACW1048	697	Cx. quinquefasciatus	Inglewood	24	CO2	9/26/19	WNV
Los Angeles	SGVA450	896	Cx. quinquefasciatus	West Valinda	50	GRVD	9/26/19	WNV
Madera	MADR178	322	Cx. quinquefasciatus	Madera	50	CO2	9/25/19	WNV
Madera	MADR195	329	Cx. quinquefasciatus	Chowchilla	45	CO2	9/27/19	WNV
Madera	MADR299	320	Cx. tarsalis	Chowchilla	42	CO2	9/25/19	SLEV
Madera	MADR309	317	Cx. quinquefasciatus	Madera	50	CO2	9/24/19	WNV
Madera	MADR85	316	Cx. quinquefasciatus	Madera	26	CO2	9/24/19	WNV
Orange	ORCO1005	4000	Cx. quinquefasciatus	Buena Park	28	GRVD	9/17/19	WNV
Orange	ORCO1005	4003	Cx. quinquefasciatus	Buena Park	28	GRVD	9/17/19	WNV
Orange	ORCO1005	4011	Cx. quinquefasciatus	Buena Park	39	GRVD	9/17/19	WNV
Orange	ORCO1005	4012	Cx. quinquefasciatus	Buena Park	39	GRVD	9/17/19	WNV
Orange	ORCO1005	4014	Cx. quinquefasciatus	Buena Park	30	GRVD	9/17/19	WNV
Orange	ORCO1006	4051	Cx. quinquefasciatus	Cypress	46	GRVD	9/17/19	WNV
Orange	ORCO1008	3966	Cx. quinquefasciatus	Fullerton	45	GRVD	9/13/19	WNV
Orange	ORCO1015	4144	Cx. quinquefasciatus	Orange	42	GRVD	9/19/19	WNV
Orange	ORCO1038	4127	Cx. quinquefasciatus	La Palma	42	GRVD	9/18/19	WNV
Orange	ORCO1040	4062	Cx. quinquefasciatus	Orange	36	GRVD	9/17/19	WNV
Orange	ORCO198	4125	Cx. quinquefasciatus	La Habra	47	GRVD	9/18/19	WNV
Orange	ORCO218	3977	Cx. quinquefasciatus	Anaheim	51	GRVD	9/14/19	WNV
Orange	ORCO218	3979	Cx. quinquefasciatus	Anaheim	26	GRVD	9/14/19	WNV
Orange	ORCO218	3980	Cx. quinquefasciatus	Anaheim	27	GRVD	9/14/19	WNV
Orange	ORCO218	3981	Cx. quinquefasciatus	Anaheim	50	GRVD	9/14/19	WNV
Orange	ORCO218	3986	Cx. quinquefasciatus	Anaheim	32	GRVD	9/14/19	WNV
Orange	ORCO218	3987	Cx. quinquefasciatus	Anaheim	13	GRVD	9/14/19	WNV
Orange	ORCO218	3993	Cx. quinquefasciatus	Anaheim	9	GRVD	9/14/19	WNV
Orange	ORCO218	4007	Cx. quinquefasciatus	Anaheim	32	GRVD	9/17/19	WNV

California Arbovirus Surveillance Bulletin #27
 Week 40 Friday, October 4, 2019

Orange	ORCO218	4008	Cx. quinquefasciatus	Anaheim	32	GRVD	9/17/19	WNV
Orange	ORCO218	4015	Cx. quinquefasciatus	Anaheim	25	GRVD	9/17/19	WNV
Orange	ORCO218	4107	Cx. quinquefasciatus	Anaheim	21	GRVD	9/18/19	WNV
Orange	ORCO218	4147	Cx. quinquefasciatus	Anaheim	33	GRVD	9/19/19	WNV
Orange	ORCO235	4032	Cx. quinquefasciatus	Stanton	37	GRVD	9/17/19	WNV
Orange	ORCO235	4037	Cx. quinquefasciatus	Stanton	33	GRVD	9/17/19	WNV
Orange	ORCO235	4038	Cx. quinquefasciatus	Stanton	32	GRVD	9/17/19	WNV
Orange	ORCO244	4066	Cx. quinquefasciatus	Garden Grove	36	GRVD	9/17/19	WNV
Orange	ORCO302	3994	Cx. quinquefasciatus	Anaheim	15	GRVD	9/14/19	WNV
Orange	ORCO52	4045	Cx. quinquefasciatus	Anaheim	36	GRVD	9/17/19	WNV
Riverside	COAV200	5473	Cx. tarsalis	Mecca	46	CO2	10/1/19	SLEV
Riverside	NWST218	203	Cx. quinquefasciatus	Eastvale	41	CO2	9/25/19	WNV
Sacramento	SAYO226002	6218	Cx. pipiens	Rancho Murieta	2	GRVD	9/27/19	WNV
Sacramento	SAYO255007	6208	Cx. pipiens	Clay	48	CO2	9/27/19	WNV
San Bernardino	WVAL8001	2302	Cx. tarsalis	Chino	50	CO2	9/18/19	WNV
San Joaquin	SJCM8010	2477	Cx. tarsalis	Ripon	10	CO2	10/1/19	WNV
San Joaquin	SJCM8018	2450	Cx. pipiens	Stockton	14	CO2	10/1/19	WNV
San Joaquin	SJCM8079	2491	Cx. pipiens		50	CO2	10/1/19	WNV
San Joaquin	SJCM8143	2498	Cx. pipiens		50	CO2	10/1/19	WNV
San Joaquin	SJCM8206	2461	Cx. tarsalis		50	CO2	10/1/19	WNV
Stanislaus	EAST1008	19238	Cx. tarsalis	Grayson	15	CO2	9/25/19	WNV
Stanislaus	EAST1088	19241	Cx. pipiens	Modesto	30	BGSENT	9/26/19	WNV
Stanislaus	TRLK9732	1354	Cx. tarsalis		50	CO2	10/1/19	SLEV
Stanislaus	TRLK9732	1355	Cx. tarsalis		50	CO2	10/1/19	WNV
Tulare	DLTA8413	3583	Cx. quinquefasciatus	Visalia	50	CO2	9/26/19	WNV
Tulare	DLTA8413	3585	Cx. quinquefasciatus	Visalia	50	CO2	9/26/19	WNV
Tulare	DLTA8413	3587	Cx. quinquefasciatus	Visalia	50	CO2	9/26/19	SLEV
Tulare	DLTA8413	3590	Cx. quinquefasciatus	Visalia	50	CO2	9/26/19	SLEV
Tulare	DLTA8413	3591	Cx. quinquefasciatus	Visalia	50	CO2	9/26/19	WNV
Tulare	DLTA8414	3573	Cx. quinquefasciatus	Visalia	50	CO2	9/26/19	WNV
Tulare	DLTA8414	3575	Cx. quinquefasciatus	Visalia	47	CO2	9/26/19	WNV
Tulare	DLTA8414	3576	Cx. tarsalis	Visalia	16	CO2	9/26/19	SLEV
Tulare	DLTA8414	3576	Cx. tarsalis	Visalia	16	CO2	9/26/19	WNV
Tulare	DLTA8414	3600	Cx. quinquefasciatus	Visalia	50	CO2	9/26/19	SLEV
Tulare	DLTA8414	3602	Cx. quinquefasciatus	Visalia	50	CO2	9/26/19	SLEV
Tulare	DLTA8415	3581	Cx. quinquefasciatus	Visalia	39	CO2	9/26/19	WNV
Tulare	DLTA8415	3582	Cx. tarsalis	Visalia	30	CO2	9/26/19	SLEV
Tulare	DLTA8415	3582	Cx. tarsalis	Visalia	30	CO2	9/26/19	WNV
Tulare	DLTA8416	3634	Cx. quinquefasciatus	Visalia	50	CO2	9/27/19	WNV
Tulare	DLTA8416	3660	Cx. tarsalis	Visalia	39	CO2	9/27/19	SLEV
Tulare	DLTA8416	3673	Cx. quinquefasciatus	Visalia	50	CO2	9/27/19	WNV
Tulare	DLTA8421	3705	Cx. quinquefasciatus	Visalia	23	CO2	10/3/19	SLEV
Tulare	DLTA8426	3607	Cx. quinquefasciatus	Visalia	24	BGSENT	9/26/19	WNV
Yolo	SAYO135016	6184	Cx. tarsalis	Woodland	50	CO2	9/26/19	WNV
Yolo	SAYO136010	6202	Cx. tarsalis	Woodland	50	CO2	9/26/19	WNV
Yolo	SAYO136010	6204	Cx. tarsalis	Woodland	50	CO2	9/26/19	WNV

California Arbovirus Surveillance Bulletin #27

Week 40 Friday, October 4, 2019

Sentinel Chickens

County	Site Code	City	Date Bled	Virus	Band 01	Band 02
Colusa	CLSA1002	Colusa	9/23/2019	WNV	1091	1093
Sutter	SUYA0014	Sutter	9/26/2019	WNV	1841	
Sutter	SUYA0015	Robbins	9/26/2019	WNV	1825	1827

TEST PROTOCOLS

Humans:

Specimens are tested by local laboratories with an IgM or IgG immunofluorescent assay (IFA) and/or an IgM enzyme immunoassay (EIA). Specimens with inconclusive results are forwarded to the California Department of Public Health Viral and Rickettsial Disease Laboratory (VRDL) for further testing with a plaque reduction neutralization test (PRNT).

Dead Birds

Oral swab samples collected from bird carcasses are tested at the UC Davis Arbovirus Research and Training laboratory (DART) or at a local agency for West Nile virus by RT-qPCR.

Sentinel Chickens:

Dried blood spot samples from sentinel chickens are tested at the California Department of Public Health Vector-Borne Disease Laboratory for IgG antibodies to West Nile, St. Louis encephalitis, and western equine encephalomyelitis viruses by an EIA. Positive samples are confirmed by IFA, western-blot, or PRNT.

Mosquito Pools:

Mosquito pools are tested at DART or at a local agency for West Nile, western equine encephalomyelitis, and St. Louis encephalitis viral RNA using a multiplex RT-qPCR. Invasive *Aedes* mosquitoes (*Ae. aegypti* and *Ae. albopictus*) are also tested at DART for chikungunya, dengue, and Zika viral RNA by a separate RT-qPCR.

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Website Information: For updated information on WNV in California, please visit the California WNV website, www.westnile.ca.gov, or the California Vectorborne Disease Surveillance System website, www.calsurv.org. For national information on WNV and other arboviruses, please visit the CDC websites: www.cdc.gov and https://wwwn.cdc.gov/arbovet/maps/ADB_Diseases_Map/index.html